

177. The spinal fusion implant of claim 108, further in combination with a fusion promoting substance.

178. The spinal fusion implant of claim 177, wherein said fusion promoting substance is bone morphogenetic protein.

179. The spinal fusion implant of claim 177, wherein said fusion promoting substance includes hydroxyapatite.

180. The spinal fusion implant of claim 177, wherein said fusion promoting substance includes hydroxyapatite tricalcium phosphate.

181. The spinal fusion implant of claim 177, wherein said fusion promoting substance is genes coding for the production of bone.

182. The spinal fusion implant of claim 177, wherein said fusion promoting substance is bone.--.

### REMARKS

#### Request to Withdraw Improper Finality

In the Office Action dated July 16, 2001, the Examiner indicated that the action was final. Applicant respectfully submits that the finality was improper. In the reply to Office Action dated March 20, 2000, Applicant included a Request to Withdraw Finality under 37 C.F.R. § 1.129(a) and payment of the fee under 37 C.F.R. § 1.17(r). After a request to withdraw finality is made and the appropriate fee is paid, MPEP § 706.07(g) states that "the next Office action on the merits may be made final only under the conditions for making a first action in a continuing application final set forth in MPEP § 706.07(b)." (MPEP § 706.07(g), page 700-67, col. 2, second paragraph (August 2001)) (emphasis

added). In the Office Action, the Examiner stated that the amendment to the claims of March 20, 2000 necessitated new grounds of rejection. Applicant submits that the rejection cannot be made final under pursuant to MPEP §§ 706.07(g) and (b). Applicant respectfully requests the Examiner to withdraw the finality of the Office Action as being improper pursuant to MPEP § 706.07(d) and enter the amendments submitted with this reply.

#### Request to Provoke Interference

Pursuant to MPEP § 2308.01 Applicant submits together with this reply, Applicant's declaration under 37 C.F.R. § 1.608(a) stating that the effective filing date of this application is less than 3 months after the effective filing date of the Zdeblick '909 patent and alleging that there is a basis upon which application is entitled to a judgment relative to the patentee of the Zdeblick '909 patent. (Declaration of Gary K. Michelson, M.D., ¶¶ 3 and 4.) Accordingly, Applicant requests that the Examiner provoke an interference with the Zdeblick '909 patent.

#### The Examiner's Cursory Assertion That All Pending Claims Are Rejected In View Of Zdeblick '909 Is Improper And Flawed

Applicant cancelled claims 120 (both occurrences); amended claims 40, 68, 70, 93-96, and 124-128; and added new claims 148-182 to further define Applicant's claimed invention. New claims 148-152 directed to substantially the same subject matter of former dependent claims 10, 26, 27, and both occurrences of dependent claim 120, respectively.

In the Office Action, the Examiner rejected claims 1-9, 11-25 and 28-147 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,669,909 ('909) to Zdeblick et al. Applicant submits that claims 1, 2, 4-7, 9, 11, 13-18, 21, 23, 69, 71-75, 77, 79, 81-86, 88, 90, 91, 96, 98-100, 106-111, 113, 115, 118, 119, 121, 123-125, 128, 129, 132-134, 137-139, and 142-149 are in condition for an interference with Zdeblick '909.

Independent claim 25 and claim 70 (dependent from independent claim 69) recite an implant with a body having a "substantially frusto-conical configuration" with a thread having a locus forming a "substantially cylindrical configuration." Zdeblick '909 does not teach, disclose, or suggest an implant having a substantially frusto-conical body with a thread having a locus forming a substantially cylindrical configuration. Applicant submits that independent claim 25 and dependent claim 70 are patentable and that dependent claims 26-48, 94, 101-103, 126, 130, 135, and 140, and new dependent claims 151, 152, and 159-164, dependent from independent claim 25 or claims dependent therefrom, are patentable at least due to their dependency from an allowable independent claim 25.

Independent claim 49 recites an implant having a body with a "substantially cylindrical configuration" and a "truncated side," and a thread having a locus "forming a substantially cylindrical configuration." Zdeblick '909 does not teach, disclose, or suggest an implant having the structure recited in independent claim 49. Applicant submits that Independent claim 49 is patentable and that dependent claims 50-68, 93, 95, 104, 127, 131, 136, and 141, and new dependent claims 165-170, dependent from independent claim 49, or claims dependent therefrom, are patentable at least due to their dependency from an allowable Independent claim 49.

Claim 3 (dependent from independent claim 1) recites an implant having a body with a "substantially cylindrical configuration" and a thread having an outer locus forming "a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 3 and independent claim 1. Applicant submits that dependent claim 3 is patentable.

Claim 8 (dependent from independent claim 1) and claim 76 (dependent from independent claim 69) recite that the implant "is at least in part bioabsorbable." Zdeblick '909 does not teach, disclose, or suggest an implant that is at least in part bioabsorbable as recited in dependent claims 8 and 76. To the contrary, Zdeblick '909 states that an additional advantage of his material is that "it does not undergo resorption" and teaches away from Applicant's claimed invention. (Zdeblick '909, col. 9, lines 8-12).

Claim 12 (dependent from independent claim 1) recites an implant having a thread with an outer locus "forming a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end," the thread having "a thread height measured from said body which is variable along the length of said implant." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 12.

Claim 19 (dependent from claim 15 which depends from independent claim 1) recites an implant having a body with "an internal chamber and means for accessing said internal chamber," "means for closing said accessing means," and a thread with

an outer locus "forming a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 19.

Claim 20 (dependent from claim 16, which depends from claim 15, which depends from independent claim 1) recites an implant having a body with "an internal chamber and means for accessing said internal chamber," the internal chamber being "capable of containing fusion promoting material," the body having "means for closing said accessing means," and a thread with an outer locus "forming a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 20.

Claim 22 (dependent from independent claim 1) recites an implant having a thread with an outer locus "forming a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end," and "at least a portion of said outer surface comprises wells having at least partial walls." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 22.

Claim 24 (dependent from dependent claim 23, which depends from independent claim 1) recites an implant having a body with "at least one truncated side," and a thread with an outer locus "forming a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end," the thread having "a thread height measured from said

body which is greatest at said truncated side." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 24.

Claim 78 (dependent from independent claim 69) recites an implant having a body with a "substantially frusto-conical configuration" and a thread with a thread radius measured from the longitudinal central axis of the implant, the thread radius being substantially uniform throughout the length of the implant. Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 78.

Claim 80 (dependent from independent claim 69) recites an implant having a body with a "substantially frusto-conical configuration" and a thread having "a thread height measured from said body which is variable along the length of said implant." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 80.

Claim 87 (dependent from claim 83 which depends from independent claim 69) recites an implant having a body with a "substantially frusto-conical configuration," an "internal chamber and an access opening for accessing said internal chamber," and "means for closing said accessing means." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 87.

Claim 89 (dependent from independent claim 69) recites an implant having a body with a "substantially frusto-conical configuration" and "at least a portion of said outer surface comprises wells having at least partial walls." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 89.

Claim 92 (dependent from claim 91 which depends from independent claim 69) recites an implant having a body with a "substantially frusto-conical configuration" and "at least one truncated side," and a thread with "a thread height measured from said body which is greatest at said truncated side." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 92.

Claim 97 (dependent from dependent claim 23, which depends from independent claim 1) recites an implant having a body with "at least one truncated side," and a thread with an outer locus "forming a substantially frusto-conical configuration along at least a portion of the length of said implant nearer said trailing end than said insertion end" that "is continuous over at least a portion of said truncated side." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 97.

Claim 105 (dependent from independent claim 69) recites an implant having a body with a "substantially frusto-conical configuration," and a thread that "has a height measured from said body that is larger at said trailing end than at said insertion end." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 105.

Claim 112 (dependent from independent claim 108) recites an implant having a body with "arcuate portions" in a "diverging relationship to one another," and a thread having a thread radius measured from the longitudinal central axis of the implant, the thread radius being substantially uniform throughout at least a portion of the implant. Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 112.

Claim 114 (dependent from independent claim 108) recites an implant having a body with "arcuate portions" in a "diverging relationship to one another," and a thread having "a thread height measured from said body which is variable along the length of said implant." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 114.

Claim 116 (dependent from claim 115 which depends from independent claim 108) recites an implant having a body with "arcuate portions" in a "diverging relationship to one another," "an internal chamber and means for accessing said internal chamber," and a "means for closing said accessing means." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 116.

Claim 117 (dependent from independent claim 108) recites an implant having a body with "arcuate portions" in a "diverging relationship to one another" and "at least a portion of said outer surface comprises wells having at least partial walls." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 117.

Claim 122 (dependent from independent claim 108) recites an implant with a body having "arcuate portions" in a "diverging relationship to one another," and a thread with an outer locus forming a "substantially cylindrical configuration." Zdeblick '909 does not teach, disclose, or suggest an implant having the claimed structure recited in dependent claim 122.

Applicant submits that the rejections of claims 3, 8, 12, 19, 20, 22, 24-68, 70, 76, 78, 80, 87, 89, 92-95, 97, 101-105, 112, 114, 116, 117, 122, 126, 127, 130, 131, 135, 136, 140, and 141 over the art of record have been overcome.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 50-1066.

Respectfully submitted,

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### CHANGES TO THE CLAIMS

40. (Twice Amended) The spinal fusion implant of claim [25] 39 in which said internal chamber is capable of containing fusion promoting material.

68. (Twice Amended) The spinal fusion Implant of claim 67 in which said thread has a thread height measured from said body which is greatest at at least one of said truncated [side] sides.

70. (Twice Amended) The implant of claim 69 in which [said] the outer locus of said thread forms a substantially cylindrical configuration.

93. (Amended) The spinal fusion implant of claim [92] 49 in which said [external] thread has a thread height measured from said body which is greatest at said truncated side.

94. (Thrice Amended) The spinal fusion implant of claim 25 in which said implant has an upper and lower portion for engaging the bone of the adjacent vertebral bodies, said upper and lower [surfaces] portions comprising a plurality of macroscopic openings.

95. (Thrice Amended) The spinal fusion implant of claim 49 in which said implant has an upper and lower portion for engaging the bone of the adjacent vertebral bodies, said upper and lower [surfaces] portions comprising a plurality of macroscopic openings.

96. (Thrice Amended) The spinal fusion implant of claim 69 in which said implant has an upper and lower portion for engaging the bone of the adjacent vertebral bodies, said upper and lower [surfaces] portions comprising a plurality of macroscopic openings.

124. (Amended) The spinal fusion implant of claim 108 [is] in which said implant is made of a material that is stronger than bone.

125. (Amended) The spinal fusion implant of claim 1 [is] in which said implant is made of a material that is stronger than bone.

126. (Amended) The spinal fusion implant of claim 25 [is] in which said implant is made of a material that is stronger than bone.

127. (Amended) The spinal fusion implant of claim 49 [is] in which said implant is made of a material that is stronger than bone.

128. (Amended) The spinal fusion implant of claim 69 [is] in which said implant is made of a material that is stronger than bone.